

Volume 34 Number 5  
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# School Life



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FEDERAL SECURITY AGENCY  
Office of Education



Official Journal of the Office of Education • • • • • Federal Security Agency

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Volume 34

Number 5

The cover illustration: A cerebral palsied child is learning to walk with the aid of braces and walking skis. He is enrolled in a day school class for crippled children—a part of the Chicago public schools. Chicago, first city in the United States to provide such classes, has rendered this special service for more than half a century.

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School Life is indexed in Readers' Guide to Periodical Literature, and in Education Index.

(Single copy price of SCHOOL LIFE—15 cents.)

### School Life Spotlight

"... We must begin our long deferred program of Federal aid to education—to help the States meet the present crisis in the operation of our schools. And we must help with the construction of schools . . ."-----p. 65

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"... Education of children . . . cannot be postponed . . ."-----p. 65

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"... I think everybody knows that . . . better schools and health services are not frills, but necessities . . ."-----p. 66

★ ★ ★

"... Normal peacetime needs are in the neighborhood of 30,000 engineers a year, to which must be added a temporary defense need of at least another 30,000 . . ."-----p. 68

★ ★ ★

"... the core is generally recognized as having a distinct pattern or organization . . ."-----p. 71

★ ★ ★

"... more and more effort is being exerted to provide opportunities for handicapped children and adults . . ."-----p. 72

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"... Children of migratory workers constitute a special group whose present education opportunities are inadequate . . ."-----p. 77

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THE Office of Education was established in 1867 "for the purpose of collecting such statistics and facts as shall show the condition and progress of education in the several States and Territories, and of diffusing such information respecting the organization and management of schools and school systems and methods of teaching, as shall aid the people of the United States in the establishment and maintenance of efficient school systems, and otherwise promote the cause of education throughout the country."

## Excerpts on Education, from—

# Presidential Messages and Reports to the Congress—1952

1. Report to Congress on the State of the Union
2. Economic Report of the President to Congress
3. National Budget, Fiscal Year Ending June 1953

**P**RESIDENT TRUMAN, on January 9, 1952, opened his report to the Congress on the state of the Union by saying, "At the outset I should like to speak of the necessity for putting first things first as we work together this year for the good of our country."

The President stated that economic conditions in the country are good: "There are 61 million people on the job; wages, farm incomes, and business profits are at high levels. Total production of goods and services in our country has increased 8 percent over the last year—about twice the normal rate of growth."

He spoke of several matters directly related to education:

"We must begin our long deferred program of Federal aid to education—to help the States meet the present crisis in the operation of our schools. And we must help with the construction of schools in areas where they are critically needed because of the defense effort . . .

"We urgently need to train more doctors and other health personnel through aid to medical education. We also urgently need to expand the basic public-health services in our home communities—especially in defense areas. The Congress should go ahead with these two measures immediately."

Referring to our Point IV program, the President said: "It is working—not only in India—but in Iran, Paraguay, Liberia—in 33 countries around the globe. Our technical missionaries are out there. We need more of them. We need more funds to speed their efforts, because there is nothing of greater importance in all our foreign policy."

Concerning scarce materials:

"Defense needs will take a lot of our steel, aluminum, copper, nickel, and other scarce materials. This means smaller production of some civilian goods. The cut-backs will be nothing like those during World War II, when much civilian production was completely stopped. But there will be considerably less of some goods than we have been used to these past 2 or 3 years . . .

### The Economic Report

In his Economic Report, transmitted to the Congress January 16, 1952, President Truman discussed a number of matters of concern to those in the field of education. The Report states:

"New public construction expenditures for . . . development programs including education, health, and housing, have fallen from about 3 percent of the gross national product in 1939 to less than 2 percent in 1951 . . .

"We must hold back on the construction of hospitals. Total construction expenditures for schools, although at record levels, must be held below the real need.

"True economy is desirable at all times. It is imperative during a national emergency . . . (but) . . . When we look at the whole picture, we find that true economy embraces two equally important elements: The first is the avoidance of unnecessary outlays; but the second, and equally important, is the making of necessary outlays. A nation which spent its resources foolishly would dissipate its strength. But a nation which was too timid or miserly in applying

its resources to urgent needs would fail to build up its strength."

The President further stated:

"In education, health, and social security programs, we must continue to be highly selective, deferring improvements and extensions not clearly necessary now in support of the total defense effort. Education of children, however, cannot be postponed, nor should health standards be allowed to fall. I recommend a program of general Federal aid to help meet teaching and other school operating costs, and a more adequate program of Federal aid for school construction and operation in critical defense areas."

Point 11 in the Summarization of Legislative Recommendations (p. 25 in the Economic Report) reads: "Authorize Federal aid to help meet school operating costs, and increase aid for school construction and operation in critical defense areas." And, Point 12: "Authorize Federal aid to assist medical education, and provide for strengthening local public health services."

### The National Budget

In his message on the Budget, as it pertains to *Education and General Research*, the President said:

Federal expenditures for education and general research are estimated at 624 million dollars in the fiscal year 1953, compared to an estimated 238 million dollars in 1952 and 115 million dollars in 1951. These sums do not include special-purpose education and research activities included in other Budget categories.

The substantial increase in the fiscal year 1953 will strengthen basic education programs and fundamental research. The added funds are needed primarily for new



legislation which I am recommending to help all the States improve elementary and secondary education, to help provide schools in those communities which are overburdened because of Federal activities, and to give financial assistance to capable young people who otherwise could not attend a college or university.

New obligational authority recommended for 1953 is 688 million dollars, but largely because of the length of time required to complete and pay for buildings under the school construction program the expenditures will be 64 million dollars less than this amount.

The chart accompanying this report shows a comparative break-down by Program or agency, of educational expenditures—actual for 1951, and estimated for 1952 and 1953.

### Promotion of Education— Elementary and Secondary

On this subject, as it concerns the Budget, the President said:

At present, too many of our people are unable to make full use of their capabilities, whether in civilian employment or military service, because their opportunities for education and training have been limited. Schools are overcrowded, substandard instruction is common, and teachers' salaries continue low in many areas.

The most serious aspect of this situation is that it can so easily become very much worse. Our school-age population is now rising rapidly, as a result of the great increase in birth which began in the war years. The number of children entering the first grade is now nearly 10 percent higher than it was only 4 years ago. Four years from now it will have risen another

**"I think everybody knows that social insurance and better schools and health services are not frills, but necessities in helping all Americans to be useful and productive citizens, who can contribute their full share in the national effort to protect and advance our way of life."—President Truman**

24 percent. Meanwhile, of course, these children will be moving up through the grades, year by year, putting new strains successively on our elementary and secondary school systems.

I have urged the Congress for several years to enact legislation providing grants to the States for operation and maintenance of their local schools. These grants would assist the States in improving their systems of elementary and secondary education by raising teachers' salaries, providing more and better textbooks, and in many other ways. The security program has reemphasized this need. In some States more than one-third of the young men called by the Selective Service System failed the educational tests for entrance into military service during the fiscal year 1951. The States with the highest rejection rates are precisely those low-income States which, despite heavier taxes in relation to income, are unable to provide a satisfactory education for their young people. Many of the men

rejected for military service because of educational deficiencies are also unable to meet our needs for skilled workers in industry. At a time like this we cannot afford to waste any resources, yet this pool of inadequately used human resources is being continually enlarged because many young people are denied the opportunity for a proper education.

This is a need that we must begin to meet at once. This Budget includes a recommendation of 300 million dollars as the preliminary estimate for general aid to education in the fiscal year 1953. Because of higher costs and the greater number of school children, this amount of aid will not fully accomplish the purposes which my earlier proposal was designed to achieve. I hope that the Congress will enact legislation containing provisions to raise equalization aid to a more adequate level over the next decade.

In addition to this new program of general aid, the Budget includes 45 million dollars in estimated appropriations for operation and maintenance aid to certain local school districts where the Federal Government has a special responsibility to furnish assistance because Federal activities have imposed special burdens.

This Budget also includes estimated appropriations of 225 million dollars for the construction of school facilities in critical defense housing areas and other places specially affected by Federal activities. Of this amount, 150 million dollars is needed to continue the program already authorized, and the remainder is a preliminary estimate of needs under proposed legislation.

We are also moving forward on a detailed 3-year Nation-wide survey of our school construction needs generally, as authorized by the Congress in 1950. In cooperation with the Office of Education, the States are making good progress in surveying their shortages of school facilities and their resources available to meet these shortages. The information coming in from this survey will help us to determine what the future role of the Federal Government should be in relation to school construction needs.

Meanwhile, the States and localities are doing a great deal to meet the situation. During the calendar year 1951 they broke all previous construction records by building more than 40,000 new classrooms costing 1.3 billion dollars. It is gratifying that, despite the shortage of structural steel, we have been able to make enough available for the first half of 1952 to continue and even increase this rate of construction on the basis of modified designs which require less steel.

The present programs of Federal aid to critical areas for construction and operation of schools are based on two laws enacted in 1950. Under these laws we provide aid to local school districts for construction and for operation of schools to meet burdens resulting from peacetime and

(Continued on page 77)

### EDUCATION AND GENERAL RESEARCH

[Fiscal years. In millions]

Program or agency	Expenditures			Recommended new obligational authority for 1953
	1951 actual	1952 estimated	1953 estimated	
<b>Promotion of education:</b>				
Office of Education:				
General aid for operating expenses, elementary and secondary schools (proposed legislation).....			\$290	\$300
Education of children on Federal property and in emergency and critical defense housing areas:				
Present programs.....	\$17	\$151	185	190
Proposed legislation.....			35	80
General assistance to college students (proposed legislation).....			30	30
Vocational education.....	27	26	26	26
Other programs.....	7	9	8	8
<b>Educational aid to special groups.....</b>	6	8	8	5
<b>Library and museum services.....</b>	10	11	12	12
<b>General purpose research:</b>				
National Science Foundation.....	(1)	1	5	15
National Bureau of Standards.....	10	11	12	9
Seventeenth Decennial Census (Department of Commerce).....	30	13	3	2
Other.....	8	8	10	11
<b>Total.....</b>	<b>115</b>	<b>238</b>	<b>624</b>	<b>688</b>

1 Less than one-half million dollars.

# Engineering and the High School as a Source of Supply

by Harry A. Jager, Chief, Guidance and Counseling Services Branch, and  
Henry H. Armsby, Associate Chief for Engineering Education, Office of Education

**T**HE SUPPLY of engineers has been a topic for consideration by the Engineers' Council for Professional Development and its Guidance Committee, by the American Society for Engineering Education, and by the Engineering Manpower Commission of the Engineers' Joint Council. Among the sources of supply considered by these bodies are the public secondary schools.

## Some Basic Assumptions in Secondary Schools

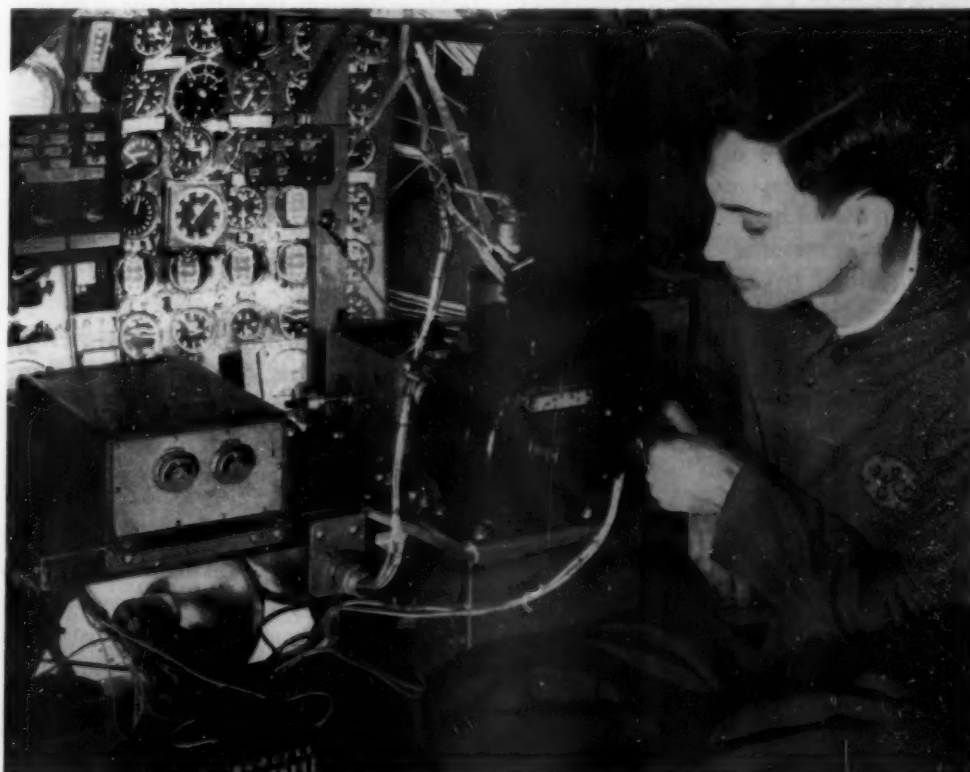
In helping young people make a choice of careers the guidance services in the secondary schools are the natural channels. Four or five thousand schools have counselors to deal with these problems. A thoroughly trained counselor has undergone a comprehensive range of preparation which should enable him to see both the engineers' side of the question and that of his pupils. There are, however, even more thousands of schools which do not have trained counselors. The efforts of engineers to reach pupils in the latter schools with the facts of engineering careers are somewhat handicapped. However, the needs of the engineering profession cannot be supplied unless all students enrolled in high schools, large and small, rural or urban, with or without guidance programs come within the program.

In any scheme of cooperation between engineering groups and schools one fact should be recognized that is not always apparent: Neither secondary schools nor guidance services are or can be engaged in a program of recruitment as such. From the schools' point of view young people in a democracy have a free choice in matters of training and vocation. The effort of the school is to see to it that these choices are

At recent conferences called by the Thomas Alva Edison Foundation, and the Office of Education, attended by leaders in the science and engineering fields, there was agreement that steps should be taken to interest more youth in educational subjects basic to the preparation of the Nation's future scientists, engineers, and technicians. This article by Mr. Jager and Mr. Armsby is pertinent to the problem, and we are pleased to present it in School Life.

made by young people on a basis of a knowledge of their abilities and interests on the one hand, and of all opportunities open to them, in the light of these abilities and interests, on the other. This protection of the intelligent self-interest of the individual, however, is not irreconcilable with an increase in the supply of *suitable* candidates for the engineering profession.

School authorities will probably seek answers to certain questions as they help their young people approach the problem of responding to engineering needs.



This young man, shown inside the big fuselage of the G-E B-29 "Flying Laboratory," is a student in the Technical Course for Laboratory Assistants, a program conducted by the General Electric Laboratory at Schenectady, N. Y.



## What Is the Demand and Supply with Respect to Engineering Candidates?

The first question is: What are the needs for manning engineering, and what is the supply in secondary schools to fill these needs?

Normal peace-time needs are in the neighborhood of 30,000 engineers a year to which must be added a temporary defense need of at least another 30,000. About 42,000 engineering degrees were granted in 1951, but the number of graduates will decrease to about 17,000 in 1953 and will remain at approximately that figure for the next 10 years unless a larger proportion of high-school graduates enter engineering colleges.

The number of high-school graduates in 1951 was some 1 million 240 thousand, only half of whom were boys, the only realistic source for engineering material at this juncture. Normally (that is without veteran enrollment) it requires 70 thousand freshmen to produce 35 thousand engineering graduates, because only 49 percent of freshmen remain to graduate. Seventy thousand is about 11 percent of boy graduates in the current year, or in any of the next 4 or 5 years. Practically, however, only the top half of any graduating class is acceptable for college entrance, which raises this figure to 22 percent of available boys. In other words, to produce 70 thousand engineering freshmen one boy out of every 5 going to college from all graduating classes must choose engineering. In the past, however, over a period of years engineering freshmen have composed only 11.6 percent of the top half of high-school graduates.

Is there any reasonable hope that the number of qualified boys choosing engineering can be doubled this year or in any year soon to come? <sup>1</sup>

There are several reasons why the answer must be "No." One is that college students of all goals must come from the top half of graduating classes. The second is that thousands of small schools do not offer the preliminary courses essential for engineering enrollment, so that there are actually many fewer than 300 thousand in the top half to draw from. A third is that almost all the professions are making similar claims of undermanning, and to a greater share of this college material. It is obvious

<sup>1</sup> The military service question is deliberately left out of these calculations. If it were included all figures would likely be worse from the point of view of engineering goals.

that doubling recruits for one profession can be done only at the expense of one or more others. In the fourth place, engineering, as a stable profession, especially to boys looking 5 or 6 years ahead, has not yet made a clear case to the general public.

There will doubtless be an effort to enroll more girls for the engineering profession. Women, according to some estimates, do not now compose more than  $\frac{1}{2}$  of 1 percent of the engineering group. The success of many women leaves little doubt as to their abilities in engineering, but there are many other hurdles in the way of choice and success. Their interests, aptitudes, and acceptability on the job present greater difficulties than their abilities. The great current demand for girls in nursing, teaching, and office occupations offers them easier and more compatible careers. A reference to the want ads in any newspaper in the larger cities will reveal that young women with a minimum of experience and perhaps not more than a year's education beyond high school can command salaries which compare very favorably with the entrance salaries for male engineers.

Engineers are not the only group in the labor force pinched between supply and demand. The 2 million young people reaching 18 years old each year are emerging as almost the only permanent and reliable addition to the labor force of 65 millions. The military can and will assert its priorities. Engineering like all other professions, then, must face a crisis in the manpower problem as crucial as has ever before occurred. All in all, the supply of boys in high schools for engineering is strictly limited. If needs in engineering are stated accurately, new measures to supply them are called for.

## How Does Normal Attrition in Engineering Schools Affect the Problem?

The secondary schools would like to know the answer to a second question: What happens to our boys after they enter the engineering school?

The reply is presented to us in the phrase "normal attrition." Taking all institutions as a group, only 49 percent of engineering freshmen will become graduates, that is one out of two is lost. This loss is a matter of great concern to school authorities, to whom outcomes for every boy and girl are matters of intense interest.

It is readily granted that attrition is a problem in all colleges, among which engineering schools do better than four out of

seven other disciplines. The same attrition, it is also true, occurs in almost the same proportion between, let us say, the sixth grade and graduation from high school. This fact has been the occasion for many campaigns for keeping children in school, which have been successful in some States to the extent that 90 percent or more young people of high school age are enrolled in school. In a campaign for increased engineering enrollment, however, the phrase "normal attrition" should be analyzed. Secondary schools would welcome evidence that engineering institutions recognize the waste involved, and that steps are being taken to remove any remediable causes.

## Recent Study

The most recent and comprehensive national study of the causes of attrition is the bulletin "College Student Mortality" published in 1937 by the Office of Education and sponsored by 25 university project staffs. With any reservations which the changes of 14 years may make necessary, its evidence may be considered as generally acceptable.

In the section of this study dealing with engineering schools, of 100 students who left before graduation, 24.2 percent were dismissed for failure, lack of interest, or discipline; 10.7 percent left for financial reasons; 4.1 percent were casualties of death or illness. "Miscellaneous" causes accounted for 13 percent and *unknown causes for 48 percent*. The most startling fact is that half of these drop-outs were youth who had made so little impression on the institutions that nobody knew why they weren't there any more!

Fourteen years ago mortality rates were 60 percent. Current figures give 51. Whether this is a real gain is problematical, since the 1937 study was based on an accounting of individual freshmen who became graduates while the current figures merely compare the number in the freshman class with the number of graduates, without accounting for the steady influx of transfers into advanced classes. It is possible that actual mortality rates are as bad as those of 1937, or worse.

This attrition of, on the whole, well selected boys is of grave concern to schools, but it is of even greater consequence as a factor in the manpower problem. Neither an institution nor an employer can under present circumstances ask for two persons

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# First National Survey of School Facilities

by Ray L. Hamon, Chief of the School Housing Section,  
Division of State and Local School Systems, Office of Education

**T**HE OFFICE of Education is engaged in tabulating and evaluating School Facilities Survey data which have been submitted by the States pursuant to Title I, Public Law 815, the 81st Congress.

There was never a time when it was as important as it is now to give careful study to the problem of providing adequate, safe, and functional school facilities. The Nation is faced with the most critical shortage of school facilities in history. Several factors have contributed to this crisis in school-housing; such as high war-time and post-war birth rates, extensive population shifts, school district reorganization, and curricular changes due to the broadening of educational objectives.

## ***School Housing, a Crisis***

School plant construction in America has never kept pace with increasing enrollments and expanding educational programs. There was a remaining backlog of needed facilities even after the school building boom of the 1920's, and the shortage of space became more acute during the 1930's in spite of the public works programs. School construction all but stopped during the war and regular maintenance programs were neglected due to wartime shortages of materials and manpower. As a result, thousands of school buildings, which normally would have been replaced, have been continued in service and allowed to fall into a poor state of repair. Many school plants now in use are obsolete, insanitary, unsafe, and poorly located with respect to the school population served.

The schoolhousing crisis was recognized by the President of the United States in his 1950 Budget Message in which he stated:

"We know that a shortage of school buildings exists in many parts of the country as a result of wartime deferment of construc-

tion and the increase in the school-age population. We do not know the over-all extent of the shortage, the particular areas in which it exists, and whether State and local governments can alleviate it without special Federal aid for construction. In order to provide an adequate factual basis for further consideration of the problem, I ask the Congress to authorize a survey of educational building needs and the adequacy of State and local resources available to meet these needs."

Acting upon the President's request, the 81st Congress appropriated \$3 million for grants-in-aid to the States for a school facilities survey. The Federal survey funds have been allotted to the States according to school-age population, and States are required to match Federal funds with State funds and/or services.

The first phase of the survey consists of an inventory of school facilities, determination of current school facilities requirements, and a determination of State and local resources available for meeting these requirements. December, 1951, was the target date for completing the first phase of the survey at the State level. Because of late starts and complications, however, only 27 States had completed the first phase of the survey and had filed State summaries on Form RSA-6 by the end of January. As soon as the Office staff has analyzed State reports, it will report to the Congress a Federal summary of the first phase of the study, as revealed by State reports received. Excerpts from this report will then be made available to local and State school agencies and to the general public through the press and magazines.

## ***Summary of Survey Report***

A summary of the first phase of the survey will reveal the extent of: overcrowding, use of improvised and makeshift school facilities, and occupancy of unsafe and un-

healthful school plants. The summary report will also reveal current school facilities requirements and availability of funds for modernizing existing facilities and providing the necessary additional facilities to house properly the rapidly increasing school enrollments and expanding educational programs.

## ***Target Date for Second Phase***

June 1953, has been set as the target date for the completion of the second or long-range phase of the school facilities survey. This phase of the survey will include the State-by-State determination of need, location, type, size, and estimated cost of school facilities required in the various localities prior to 1960. The Office of Education is continuing to provide consultative services to the States relative to the long-range phase of the survey.

## ***First Nation-Wide Survey***

Although not designated as "surveys," the American people have studied the need and location of school facilities ever since our early colonial settlements. More formally organized local school building surveys have been the vogue for many years. Recently a few States have studied their school building needs on a State-wide basis. This is the first time, however, that there has been a Nation-wide survey of school facilities. This survey should result in charting the course and establishing the pattern for long-range programs of school plant construction. To be of maximum value in the years to come, it is essential that State and local educational agencies continue to study their school plant requirements and modify the State-wide school construction programs in terms of changing conditions and school plant requirements.



## Flash Reviews

### —of New Office of Education Publications

*All of these publications are for sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.*

■ **KEYSTONES OF GOOD STAFF RELATIONSHIPS**, by Ellsworth Tompkins, is Office of Education Miscellany No. 13, 16 pages, 1951—15 cents. It shows that where good staff relationships prevail, staff members achieve a high morale, a willingness to work productively, and a sense of values basic to democratic action. Good staff relationships go hand in hand with effective and democratic internal school management. But they do not come as a matter of course, except in very small schools. How to achieve some of the beneficial characteristics of a small organization is a major problem for large schools.

This pamphlet suggests ways by which large schools can improve their staff relationships. The 12 keystones are based on reported and observed practice in 47 public high schools designated by State and university leaders in education as having good staff relationships.

■ **HOW CHILDREN LEARN TO THINK**, by Paul E. Blackwood, Office of Education Bulletin No. 10, 19 pages—15 cents—is one in a series of bulletins on the place of subjects in the elementary school curriculum. The first of the series showed how subject matter is introduced into the program in a modern school. It was titled *The Place of Subjects in the Curriculum*, Office of Education Bulletin 1949, No. 12—15 cents. Other bulletins in the series will discuss how various skills, such as reading, creating in art, and writing, are developed in the modern school program.

This bulletin deals with how children learn to think. Children are most inclined to think when they are given an opportunity to think about real and important problems. It is important to have a classroom environment in which good thinking is expected and encouraged. Skillful teaching

stimulates children to think carefully. Opportunities to help children think abound in all phases of the school program. Numerous suggestions are given for using these opportunities.

■ **MODERN WAYS IN ONE- AND TWO-TEACHER SCHOOLS**, by Effie G. Bathurst and Jane Franseth, is Bulletin No. 18, 48 pages—20 cents. It describes practices in one- and two-teacher schools that are helping rural boys and girls get a good education. It tells how teachers help pupils to plan, select, organize, and appraise their experiences cooperatively. In the school year 1947-48 there were approximately 93,000 one- and two-teacher schools. More than 2½ million children look to these schools for the beginning of their organized education.

This new publication of the Office of Education points out that the good modern one-teacher school or two-teacher school uses and improves the resources of the country community. It is a place where older children learn to help the younger, where children, young people, and adults work together and learn from one another. Understanding and cooperation exist among parents, pupils, teacher, and community.

While *Modern Ways in One- and Two-Teacher Schools* is addressed primarily to teachers, it will also be useful to administrators, supervisors, and others who are looking for ways of helping teachers in such schools improve their teaching.

■ **HOW CHILDREN USE ARITHMETIC**, by Effie G. Bathurst, Office of Education Bulletin No. 7, 1951, 13 pages—15 cents—is another in a series of bulletins on the place of subjects in the elementary school curriculum.

This bulletin shows how children develop arithmetic abilities. It gives an overview of some of the problems in teaching with which the modern teacher deals as she helps her pupils to understand and use number concepts effectively. It illustrates ways in which boys and girls are helped to enrich each day's experiences through arithmetic and to make the subject consciously a part of life.

■ **HOW CHILDREN LEARN ABOUT HUMAN RIGHTS**, by Wilhelmina Hill and Helen K. Mackintosh, Bulletin No. 9, 16 pages—15 cents—is still another in this series.

This bulletin is concerned with the con-

cept of human rights, and the interpretation of some of these rights in the classroom, in the school, at home, and in the community. One of the most important things a child needs to learn is the ability to recognize his own rights and at the same time respect the rights of others. In the process of learning this, children are making practical applications of the principles involved in the Universal Declaration of Human Rights.

Schools and individual teachers are finding places in their crowded programs for emphasis on rights and responsibilities of individuals that point up the importance of the Universal Declaration of Human Rights. Illustrations of what is being done in the study of human rights in elementary schools in various parts of the United States are offered as suggestions.

■ **EDUCATION UNLIMITED**, by Grace S. Wright, Walter H. Gaumnitz, and Everett A. McDonald, Jr., Bulletin No. 5, 1951, 35 pages—15 cents—is the story of the people of East Hampton, Connecticut, and their school—the East Hampton High School. Back in 1946 discussions were begun of what was right and what was wrong with secondary education in East Hampton. There seemed to be more that was “wrong” than was “right.” Therefore, they decided that they would devote whatever time and effort was needed to devise a new pupil- and community-centered program based on sound educational procedures.

The East Hampton High School proved that limitations, such as low financial resources, inadequate plant and equipment, restricted curriculum offerings, small and overworked staffs, need not necessarily restrict the services of small and middle-sized high schools. This school has now provided a school program to serve all youth.

This Office of Education Bulletin demonstrates that small and rural community high schools can provide “education unlimited.”

■ **SCHOOL FIRE SAFETY**, by N. E. Viles, is Bulletin No. 13, 58 pages—20 cents. School fires endanger the lives of pupils, cause property losses, and may disrupt the school program for weeks or months. Schools have an obligation to develop and maintain fire-safe conditions in their plants. Responsibility rests on local and State school and other officials, teachers, parents, and custodians.

This bulletin stresses the importance of

(Continued on page 76)



# Core Curriculum: Why and What?

by Grace S. Wright, Research Assistant in Secondary Education,  
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**L**IKE MANY terms used in education, "core curriculum" has no precise definition. Writers in the field of curriculum usually describe it in terms of its characteristics. Basically it refers to a course in the common learnings which is designed to provide learning experiences needed by all youth. In this sense it borrows from the original use of the term when the required or basic subjects in a school's curriculum were referred to as core subjects.

In addition to the "needed by all" concept, the core is generally recognized as having a distinct pattern or organization. The time given to it is longer than that given to a single subject: A core class usually meets for a double period; in some instances three or four periods are included in the "block" for which it is scheduled. The core is not an added course, but replaces other subjects, subjects which cut across major areas of the curriculum. In more than 90 percent of the cases these subjects are English and social studies, or English and social studies in combination with one or more other subjects such as science, mathematics, health, or art.<sup>1</sup> Nearly always one teacher teaches this block class.

## Why a Block Class?

It provides opportunities for cooperative problem solving in areas of pupil needs and interests, and thus gives practice in democratic living.

It facilitates a relatedness in learning experiences.

It makes possible an improved guidance and counseling program at the classroom level.

In the junior high school, it makes the

transition from elementary school less abrupt.

All their lives people are called upon to solve problems, problems growing out of their personal and social needs, problems as members of the community, State, and Nation. Adolescents too have needs, interests, and problems. Many lists of such have been compiled. Problems which they themselves are most concerned with at this period are frequently referred to as "developmental tasks." They concern such matters as physical maturing, family relationships, relationships with the group, selecting a vocation and achieving economic independence, and acquiring a system of values.<sup>2</sup> These are the matters which are engaging most of their thought and attention. If we add to these the demands set by society, that each youth become a good citizen in a democracy and that he be skilled in the tools of learning, his problems are multiplied.

The secondary school has not been unaware of the problems of its clientele. Vocational courses and college preparatory courses have been aimed at preparing the youth for future adult economic status. Home economics may stress family relationships; courses in health or hygiene frequently take up the matter of physical development and maturing; social studies teach about citizenship; extracurricular activities may provide for many interests. On the other hand, in many schools home economics is still merely cooking and sewing; there is no course in health or hygiene; extracurricular activities may not be participated in by all pupils; and, of course, studying about citizenship does not necessarily cause one to practice it.

Even when all the courses at their best do exist in a school, group problem-solving techniques can rarely be used. Such techniques are more costly in time than the lesson assignment-study-recite method, too costly for a class which meets but a single period each day and must cover a prescribed textbook content by the end of the term.

## Problem Solving Techniques

In the block class, pupils have time for practicing the techniques of group problem-solving, techniques which they will need and will be able to use all through their lives. The core concept requires that the problems upon which they work will be those which they and society believe are important to them at their developmental level. Since more than one subject area is included in the core block, problems may cut across subject areas, in fact they disregard subject lines. Oftentimes the work of other teachers is correlated with the problem unit of the block class. Hence there will be a relatedness in learning not often found in separate subject classes where each course is an entity in itself.

The longer block of time makes it possible for a teacher to know each of his pupils better. Obviously, in a two-period class the teacher meets only half as many pupils as he does in two single-period classes. He is in a better position to help them and they in turn become better acquainted with him and with each other. Oftentimes a teacher continues with the same group for a second year.

In the junior high school, a block class results in a lesser degree of change for the pupil coming from the elementary school. The core teacher is a substitute for the single teacher he was accustomed to having through grade six.

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<sup>1</sup> Core Curriculum in Public High Schools. An Inquiry Into Practices, 1949. Washington, U. S. Government Printing Office. (Office of Education Bulletin 1950, No. 5.)

<sup>2</sup> The American High School. Eighth Yearbook of the John Dewey Society. New York, Harper & Bros., 1946. p. 84-91.

# World-Wide Interest in E

**Dr. Romaine Mackie, Specialist, Schools for the Physically Handicapped, is author of two new Office of Education bulletins: "Education of the Visually Handicapped, now available, (20 cents), and "School Housing for the Physically Handicapped." The latter is still in press.**

**I**N THE WORLD, more and more effort is being exerted to provide opportunities for handicapped children and adults. This growing concern for improvement in the conditions of the disabled was accentuated in the Fifth World Congress of the International Society for the Welfare of Cripples which convened at Stockholm in September 1951. The meetings were held in the historic Parliament Building and were attended by more than 700 people from 30 countries, including a large delegation from the United States. Two members from the Federal Security Agency went to the Con-

gress. The Office of Education was represented by Dr. Romaine Mackie who read a paper on "The Education of the Physically Handicapped"; the Office of Vocational Rehabilitation was represented by its Director, Miss Mary E. Switzer, who spoke on "Vocational Training for the Disabled."

The theme of the Congress was "Complete Services for all Disabled—A World Goal." Whenever a community attempts to provide a complete program for the handicapped, services of professional and lay people are needed, and these people must work together as a team. This kind of working together, when operating at the international level, sets a pattern, which, if multiplied many times, contributes to world understanding. Through cooperation in causes of this kind, Nations are brought nearer to the broader goal—World Peace.

In the program of the conference there was much emphasis on medical care, social and psychological problems of the handicapped and on education. It was pointed out again and again that the schools play a major role in the program for the handicapped and that the schools have a



This 12-year-old boy is learning Braille and getting his education in a special day school class for the blind in his home community. The class is housed in a regular elementary building, and is part of the public school system.

unique opportunity to help children toward optimum adjustments. Many of the disabling conditions of adults either are present or have their beginnings during childhood. The school working with the home and with other agencies may often be instrumental in preventing or correcting many of these conditions. The school also has the opportunity to help the chronically disabled learn to live with those handicaps which cannot be cured or corrected.

This emphasis on the importance of suitable educational programs for the handicapped received more than usual attention; for example, more attention was given to education in this Congress than in the Pan American Conference held in Mexico City in 1948 and sponsored by the same organization. There seemed to be in the Stockholm Congress a proportionately larger and more vocal delegation from the field of education, including residential and hospital schools, and various types of day schools. These delegates made every effort to come together to discuss their problems, both within the framework of the conference and on an informal basis.

The exhibits from various countries in-



The Everett, Washington, school for cerebral palsied children has found ways of transporting severely crippled children to day schools. By means of a ramp which folds up as part of the wall of the bus, wheel chair cases can be taken to and from school.



# in Education of the Handicapped



Through the use of properly fitted hearing aids, this boy is making as much use as possible of his residual hearing. Opportunity for education is available to him through special day school classes provided by the Chicago public schools.



In the program of the day school class for the cerebral palsied, physical therapy as well as educational experiences plays a large part. Here, a physical therapist, with the aid of parallel walking bars, helps the children learn to walk. (New Mexico)

cluded splendid collections of photographs and publications on schools for the handicapped. The exhibit materials from the United States were contributed by leaders

in the education of exceptional children. Prior to the time of the Congress, the National Association of State Directors of Special Education joined with the Office of



At Aberdeen, S. Dak., a student teacher uses the visual method of teaching to show pupils how to draw maps of sections of the United States, and paste on them cutout pictures of area products and industries. A class of handicapped children is trained by occupational therapy.

Education in assembling photographs which showed the work of schools for the handicapped in this country. The collection (placed under a red, white, and blue banner) showed photographs of children with crippling conditions, impaired hearing and vision, speech defects, and other health problems. These portrayed the work of the schools much better than words could have done. Another exhibit on education of physically handicapped children displayed at the Congress is of special interest to Americans since a committee of the National Association of State Directors of Special Education and the Office of Education gathered materials for this. It is a traveling exhibit prepared by the International Union for Child Welfare. During the summer of 1951, it was shown in Cologne, Germany. As a permanent exhibit it was taken from the Congress in Sweden to Finland and other countries.

The International Society for the Welfare of Cripples, of which Mr. Donald Wilson is Secretary-General, sponsored the Congress in Sweden. It is a federation of national, nongovernmental organizations whose sole purpose is to serve the welfare of the handicapped. The organization has consultative status with the Economic and Social Council of the United Nations. It also has unofficial relationship with the World Health Organization, and a cooperative liaison is maintained with UNESCO. The United States affiliate, the National Society for Crippled Children and Adults, Inc., 11 South La Salle Street, Chicago, Illinois, had an official delegation at the Congress, headed by Dr. Lawrence Linck, its Executive Director. Other organizations concerned with the education and general care of exceptional children having official representation at the Congress were the National Association of State Directors of Special Education, with Mr. Richard S. Dabney, Director, Section on Special Education, Missouri State Department of Education, as Chairman; and the International Council for Exceptional Children, with Dr. Samuel Kirk, Professor of Education, University of Illinois, as Chairman.

# ☆☆☆ Education for the Nation's Defense—XIII ☆☆☆

**I**N A DEFENSE Information Bulletin dated December 18, 1951, the Office of Education issued the following information regarding critical materials for education construction, second quarter, 1952.

## **Critical Materials for Education Construction, Second Quarter 1952**

It is expected that the Defense Production Administration will have made its program determination and allocations of steel, copper, and aluminum for the second quarter 1952 for school, college, and library construction on or before January 15, 1952. It will facilitate the processing of applications for authorization to commence construction and for allotments of critical materials to support such construction planned to begin in the second quarter 1952, if these applications on CMP Form 4-C are filed with the Office of Education on or before January 15, 1952. CMP Forms 4-C may be secured from State Departments of Education, Regional Offices of the Federal Security Agency, Regional and Field Offices of the National Production Authority, Department of Commerce, or the U. S. Office of Education, Washington 25, D. C. A detailed Manual of Instructions for filling out Form 4-C applications for school, college, and library construction may be secured upon request from the U. S. Office of Education.

It is anticipated that the short supply of steel, copper, and aluminum for school, college, and library construction will continue into the fourth quarter of 1952, necessitating continuance of efforts upon the part of school officials, architects, and contractors to curtail the use of critical materials, deferring plans for construction of gymnasiums, auditoriums, student unions and limiting construction to essential classroom housing and related facilities.

It has been necessary, because of limitations resulting from the first quarter 1952

allocation of steel for college and library construction, to defer temporarily approval of all applications for authority to commence construction in first quarter 1952 and to reschedule structural steel allotments previously made to a number of college and library projects from the first to the second quarter 1952. Projects selected for such rescheduling were those in the two lowest priority categories of projects under construction which had not previously been delayed by rescheduling and which involved 10 or more tons of structural steel.

## **Year-Round Program for Purchasing School Buses**

State and local school officials can make a contribution to the defense effort by adopting a year-round program for purchasing their school buses. This was reported in a Defense Bulletin dated December 27, 1951, covering the substance of a letter to the Office of Education from Mr. Edward D. Hicks, Jr., Director of the Street and Highway Transport Division of the Defense Transport Administration. The Defense Transport Administration has done a very careful job in estimating the need for new school buses, and the National Production Authority has recognized the justification of the program submitted by the DTA by allocating sufficient materials to keep the program going on a near normal basis.

Mr. Hicks' letter may be summarized in these three points:

1. The National Production Authority allocates its materials by quarters; these allocations are usually based on one-fourth of the estimated needs for the year. However, the purchase of school buses is not distributed evenly throughout the four quarters of the year. More than 40% of the school buses sold annually are purchased in the third quarter of the year.

2. It is not customary for manufacturers to produce buses until they have orders for

them. For this reason, manufacturers carry their materials in stock and show it in their inventories at the beginning of the next quarter. Materials allocated for one quarter may be carried over for use in the next quarter. However, if school bus manufacturers carry over a large inventory of critical materials at the end of the first or second quarter, the NPA might conceivably cut the steel allocations for the following quarters.

3. Manufacturers need skilled employees to make school buses, and they will not be able to retain these employees in the present emergency unless they are employed on a year-round, full-time basis. This can be accomplished by distributing the demand for school buses so as to correspond more closely to the allocation of materials used to manufacture them; that is, the rate of demand and allocation should be approximately 25% per quarter.

Mr. Hicks concludes his letter by saying: "In view of the foregoing factors it is suggested that the schools, where possible, adopt a year-round program for purchasing their school buses. In turn manufacturers will be able to use their materials on a 25% per quarter basis, thereby retaining their skilled employees and eliminating the possibility of a downward revision in the allocations of critical materials by the National Production Authority."

The importance of maintaining school bus production at a high level is seen when we realize that nearly 7 million children are carried each day by school buses and that the number of school buses is greater than the number of buses used for all other public transportation.

In some State and local systems budgetary and legal restrictions will prevent much change in the time of purchasing school buses, but school administrators should cooperate to the greatest degree possible in complying with this request from DTA.



## CORE CURRICULUM

(Continued from page 71)

### Is a Block Class Always a Core?

The answer is "No." The block pattern of organization described makes it a core-type class, but not a core, according to criteria of the experts. Many block classes represent merely an attempt at unification of two or more subjects. In some, this is a correlation of English with the social studies textbook. In others, problem-units are used, but the units are derived from the textbook and learning follows fairly closely a textbook-determined pattern. Such classes are often referred to—and very properly so—as *unified studies*.

Schoolmen refer to their block classes variously as general education, common learnings, unified studies, social living, and core. Except for *unified studies*, the terms do not differentiate among several types of programs, but are used interchangeably. Unless differences are recognized, variety in terminology leads to confusion. *Social Living* might well be considered the proper-name designation of a course for which the common or generic name is *core*. Since *general education* is commonly used to refer to that part of a school's curriculum which is nonvocational and nonspecialized, it seems less appropriately used to designate a single course than does *core*. *Common learnings*, the term used by the Educational Policies Commission,<sup>3</sup> has not had so wide usage in literature or in practice as has *core*.

### Distinguishing Characteristics of Core

Unified-studies classes are one step in the direction of core but they accept only part of the basic philosophy. Block classes which are core go further; they recognize the importance to youth of acquiring skill in democratic living through actually practicing it in the classroom. Core issues may be topics to find out about; ideally they are problems to be solved. Problems grow out of the personal, social, or civic needs of youth. Problem-solving techniques are used. Working in groups and in committees is common practice. Activities are so varied that each member of a class, whatever his level of ability, will be able to participate and to feel that he is making a contribution. The core class may include ac-

tivities often considered extracurricular, such as student council work, expression of hobby interests, and social activities which give practice in cooperative planning.

Pupil-teacher planning is a significant aspect of method. The extent of cooperative planning, or participation by pupils in planning, varies. In some schools there are planned curriculum guides or resource units. Scope and sometimes sequence have been predetermined. Teacher-pupil planning is then confined to activities within a unit. In other schools, joint planning begins with the selection of the unit, continues through the formulation of the objectives or goals and the activities which will achieve them, and ends with the evaluation of accomplishment of the class and its individual members.

The core makes use of no single textbook, but of a number of different books and many different kinds of reference materials, some of which are available in the classroom and others in the central library. Fugitive materials are important. Many libraries, and even classrooms, have extensive clipping files. Pupils themselves search for pertinent materials. Reading, however, is only one type of activity. Excursions into the community, talking with people who "know," demonstrations by

community members or by a committee of pupils, construction or preparation of material for a culminating activity, use of visual aids—all of these have a large share in the "how" of learning.

### Core and Core-Type in Actual Practice

To discover the extent to which schools which have a core-type organization actually digress from traditional content and method, was an important purpose of a questionnaire sent out by the Office of Education during the school year 1950-51 to principals having core-type programs. Four types drawn from six interpretations of current conceptions of the core curriculum made by Alberty<sup>4</sup> were briefly described. High school principals were asked to check those statements which most nearly fitted the type of program in their schools. When more than one type was used, they were asked to check each, placing a double check beside the one which represented most common practice. The table that appears with this article quotes the statements on the questionnaire and shows the percentage of schools following each type of pro-

<sup>4</sup> Alberty, Harold, et al. *How to Develop a Core Program in the High School*. Columbus, Ohio: State University, 1949. multi.

Extent to which 519 secondary schools use four core or core-type programs

Type of program	Percent of schools using			
	Exclusively	In some classes	In most classes	Total
A. Each subject retains its identity in the core, that is, subjects combined in the core are correlated but not fused. For example, the teaching of American literature may be correlated with the teaching of American history. The group may be taught both subjects by one teacher or each subject by the appropriate subject teacher.....	31.6	13.1	8.9	53.6
B. Subject lines are broken down. Subjects included in the core are fused into a unified whole around a central theme, e. g. "Our American Heritage" may be the central theme for a core unifying American history and literature, and possibly art and music....	15.6	20.0	7.3	42.9
C. Subjects are brought in only as needed. The core consists of a number of broad preplanned problems usually related to a central theme. Problems are based on predetermined areas of pupil needs, both immediate felt needs and needs as society sees them. For example, under the theme, Personal-Social Relations, there may be such problems as school citizenship, understanding myself, getting along with others, how to work effectively in group situations. Members of the class may or may not have a choice from among several problems; they will, however, choose activities within the problems.....	11.4	17.7	8.7	37.8
D. Subjects are brought in only as needed as in "C" above. There are no predetermined problem areas to be studied. Pupils and teacher are free to select problems upon which they wish to work.....	2.7	9.1	1.7	13.5

<sup>3</sup> Education for All American Youth. Washington, National Education Association, 1944.

gram in all classes, in some classes, and in most classes.

According to the interpretations of core given by most writers in the field, A and B are unified studies—core-type but not true core. Types C and D meet the criteria for core. Both are concerned with the problems of youth; they are pupil-centered rather than subject-centered. Type C followers adhere to the belief that certain problems are persistent in the lives of all youth and should, therefore, be worked upon by each class. Type D allows free choice of problem selection. A total of 222 schools, or 42.8 percent of the returns received, report C or D type cores in one or more classes. It is fairly common to find two or more types operating in a single school.

In the five States from which more than 35 reports were received—California, Maryland, Michigan, New York, and Pennsylvania—there is variation as to the type of program which predominates. California and Pennsylvania have by far the largest number of their schools in the Type A category, according to principals' reports. At the same time, Pennsylvania, more than any other State has the largest percentage of schools reporting Type D. Michigan uses predominantly types A and B. New York's schools spread themselves more evenly than do the other States over the three categories A, B, and C, with A predominating. Maryland, with its State-wide program of core-curriculum development, is the only one of the five States in which Type A plays a minor role. Here types B and C predominate with Type C reported slightly more frequently than Type B.

### Core Type Changes

Do schools plan to change from the type of core they are now using to another type? Most of the 436 schools replying to this question do not. When a change is indicated, it is in the direction of progress towards a more advanced type of program. Of the 77 schools planning to change, 26 now having Type A cores only, plan to change to Type B; 36 having predominantly Type A or Type B will change to Type C; and 14 schools hope to develop their programs to become Type D. Several schools report that while they have no definite plans to change, they are considering it, or that as soon as teachers are ready to progress, changes will be made. One principal who reported the use of all four core types explained, "We are, however, moving toward something akin to C. Our teachers have

been meeting weekly during the past 2 years. During the summer about half of them formed a study group which met half days for 2 weeks and worked out a manual which includes a detailed statement of goals and some suggestions for methods and evaluation procedures."

### Obstacles to Core Development

There are many reasons that core-type programs are found twice as often as are true core. Most of them can be summed up by the word *insecurity*: insecurity on the part of teachers, administrators, parents, and even pupils—insecurity that comes when something untried replaces something long used.

It is widely recognized that core teaching is much more difficult than traditional subject teaching. Teachers with special qualifications are needed, for as one principal put it, "A poor core teacher can spoil a pupil's entire year." More important than ever is the teacher who likes boys and girls, who is interested in teaching boys and girls rather than subject matter. But that is not enough; teachers need special training for core teaching. Schools cannot depend on finding teachers ready trained, for it is the rare college that prepares for core work. The alternative is to train their own. This presumes that the principal or someone on his staff, if a single school is involved, is capable of taking a leadership role in such an in-service training program. It also presumes the willingness of all to spend the time necessary to prepare for the introduction of the program.

Actual in-service training for core teaching, however, is several steps beyond where the school should begin. The principal should first be assured of the consent of his entire staff, and the active interest of at least two or three teachers. Drafting teachers is fatal to the success of a core program. Also, the administrator has a public-relations job to do, for in many situations it is equally fatal to install the program without the full understanding and consent of those whose children are to be served. A gradual or broken-front approach to core such as is represented by a unified studies or core-type course avoids some of the pitfalls that may occur when a school attempts to launch a full-fledged core curriculum before it is fully prepared.

## FLASH REVIEWS

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safe conditions in school plants, lists various hazards, and outlines certain procedures for avoiding or eliminating some of these hazards. It is designed as a guide for those interested in and responsible for school safety. It will also be of value to teachers as source material for class instruction in fire safety.

■ **A DIRECTORY OF 2002 16-MM. FILM LIBRARIES.** By Seerley Reid and Anita Carpenter. Office of Education Bulletin 1951, No. 11. 113 pages. 30 cents.

This directory is a State-by-State and city-by-city list of sources from which 16-mm. films can be borrowed or rented. It includes libraries which handle entertainment films and those which handle instructional films. Listed are libraries which have only one film and libraries which have thousands of films. The directory includes also commercial dealers, colleges and universities, city and State school systems, public libraries, industrial companies and trade associations, labor unions, civic groups, religious institutions, and Government agencies.

■ **LAND-GRANT COLLEGES AND UNIVERSITIES—WHAT THEY ARE AND THE RELATIONS OF THE FEDERAL GOVERNMENT TO THEM.** Office of Education Bulletin 1951, No. 15. 27 pages. 15 cents.

In addition to giving other information, this bulletin answers the frequently asked question: "What are land-grant colleges and universities?" In brief, the land-grant colleges and universities are the result of a partnership of the States and the Federal Government. They represent an effort to provide a type of higher education within the reach of, and adapted to the needs of, the agricultural and industrial people of this country. In organization, the land-grant colleges and universities exemplify better than most other institutions the most effective relationship among research, campus instruction, and adult education.

■ **EDUCATION OF VISUALLY HANDICAPPED CHILDREN.** By Romaine Mackie. Office of Education Bulletin 1951, No. 20. 46 pages. 20 cents.

Visually handicapped children are defined in this bulletin as the blind and the partially seeing. For more than one hun-



dred years, some attention has been given to the needs of blind children in the United States. The blind, because of the extreme nature of their handicap, were more easily identified. Not until the early part of the twentieth century was consideration given to children classified as the partially seeing, who outnumber the blind several times.

Although progress has been made in providing for blind and partially seeing children, educators are still faced with the challenge of extending and improving services. Much of this challenge must be met by especially trained teachers who are prepared to give children the technical assistance they need. However, some of the work will have to be done by regular classroom teachers.

This bulletin helps to meet the need for information on the broader aspects of an all-round program for visually handicapped children in school. Some of the material was prepared with the special school or class in mind, but teachers of regular classes in which one or more visually handicapped children are enrolled will be able to adapt the information given and the procedures described to meet the needs of their own pupils.

Teachers everywhere who have any responsibility for blind or partially seeing children will find in this bulletin practical information to meet the problems of the day, as well as an incentive to seek further information through continued study.

■ **EDUCATION IN RURAL AND CITY SCHOOL SYSTEMS: SOME STATISTICAL INDICES FOR 1947-48.** By Rose Marie Smith. Office of Education Circular No. 329. 13 pages. 1951. 15 cents.

A continuous demand for statistics of schools in rural vs. urban areas has been expressed by educators and others active in improving our schools. Pertinent statistics were first published by the Office of Education for the school year 1929-30, and biennial studies were made from that time, ending with the year 1941-42. This publication is the first since the 1941-42 report, and includes data from 36 States.

## PRESIDENTIAL MESSAGES

(Continued from page 66)

World War II Federal activities. Expenditures under both laws are estimated at 185 million dollars in 1953. Many localities

receiving such aid have suffered additional financial strain because of current mobilization activities. Because of the rigid formulas in these laws, we have been unable to provide adequate aid to those localities and to others, such as the Savannah River and Paducah areas, where new atomic energy installations have resulted in a vastly increased need for schools.

Late in the last session the Congress passed legislation which would have amended these laws so as to provide more adequate and flexible authority for assisting critical defense housing areas, but the bill included certain objectionable provisions which compelled me to withhold my approval. I hope that the Congress will reenact, at this session, the much-needed amendments in an acceptable form and at the same time make other improvements in the laws. Expenditures under this proposed legislation are estimated at 35 million dollars in the fiscal year 1953 for both the construction and the operation programs.

Children of migratory workers constitute a special group whose present educational opportunities are inadequate. As has been pointed out by the Commission on Migratory Labor, because these children move with their families, they start school later, attend fewer days, make less progress, and drop out earlier than others. As a first step toward meeting this problem, we need to work out special teaching materials and methods suited to their education. I have therefore included in this Budget money to enable the Office of Education to make the necessary studies in cooperation with the States and with institutions of higher learning.

## Promotion of Education—Colleges and Universities

In the present emergency, our military forces and our defense industries need an increasing number of people who have advanced education and training. Full strength on all fronts is essential for the long pull, and trained manpower is critically important to such strength. This need for a substantial and rapid increase in the number of people who go to colleges and universities is a national problem requiring national action.

By temporarily postponing the induction of students into the Armed Forces, we took one step toward assuring that each man receives the training which will enable him to serve national needs most effectively. At present, however, family financial ability tends to be the factor that decides who, among the able, can continue his education and who will be inducted immediately. The results are not only unfair—they are detrimental to our national interest.

Elsewhere in this Budget there are Federal programs for aid to college students, such as the programs of veterans' education and the Reserve Officers' Training Corps. These programs are necessary for

special purposes. They do not meet the broader needs of the Nation. A general program of scholarship aid and loans for undergraduate students is the logical and practical answer, and this Budget therefore includes 30 million dollars for initiating such a program in the fiscal year 1953. The program I am recommending is designed to provide modest payments to a limited number of students, and to give this aid only in those instances where the students otherwise could not go to college.

## National Science Foundation

During the last decade we have seen how basic scientific research can alter the foundations of world power. We have seen that this research yields a stream of new knowledge which fortifies our economic welfare as well as our national strength. We have learned that a strong, steady, and wide-ranging effort in science is as essential to our sustained national security as the production of weapons and the training of military personnel.

The National Science Foundation has been established as the Government agency responsible for a continuing analysis of the whole national endeavor in basic research, including the evaluation of the research programs of other Federal agencies. On the basis of studies now under way, the Foundation will formulate a broad national policy designed to assure that the scope and the quality of basic research in this country are adequate for national security and technological progress.

The Foundation also will stimulate or sponsor basic research in subjects which otherwise might receive inadequate attention. While the research program of the Foundation is not intended to supersede the basic research programs of other agencies, the Foundation should ultimately become the principal agency through which the Federal Government gives support to basic research that is not directly related to the statutory functions of other Federal agencies. The proposed increase for research support by the Foundation has been taken into account in arriving at the recommendations for the basic research programs for the Department of Defense and other agencies.

In the present fiscal year the National Science Foundation is initiating a modest program of fellowships in the sciences. The 1953 Budget recommendation for the Foundation provides for an expansion of this program to help meet the increasing need for specialized and professional personnel in the present emergency.

To make its greatest contribution speedily and effectively, the Foundation needs in the fiscal year 1953 an appropriation of the full 15 million dollars authorized by law. Expenditures in 1953 are estimated at 10 million dollars below the appropriation because many research grants extend over two or three years and because the fellowship program is only beginning.

## ENGINEERING AND THE SCHOOL AS A SOURCE

(Continued from page 68)

so that at leisure one may be chosen and the other rejected. To the extent that mortality is preventable it should be stopped at once. Of all professions engineering, which has as its goal the scientific adjustment of means to ends, should be the most eager to eliminate waste in its own house.

It is not the purpose here to place blame for school and engineering dropouts, in which all educational levels are culpable. Engineering may, however, fairly be asked to account for certain facts.

Those entering engineering schools ordinarily are admitted by the school's own standards applied to preparatory subjects, rank in school, and personal characteristics, all of which are a matter of record in most schools and should be in all schools. The tools for evaluation and selection involved have long been a matter of study by authorities, including members of the Guidance Committee of E. C. P. D., and have become increasingly reliable for selection and admission purposes.

### Losses Are Startling

If dropouts are examined in terms of potential engineers the losses are startling. One in four (9 thousand on a basis of 35 thousand dropouts) engineering students leave college because of lack of ability, interest, or success in their studies. To what extent does this assigned cause have its roots in poor college teaching, obsolescent subject matter, crowded sections, or the lack of application of these very tools of evaluation to the teaching process in college? How much is caused by institutions bypassing or failing to apply strictly accepted standards to all entering freshmen? The dilemma has two horns: If these dropouts are not apt, how did they get into the institution; if they are apt, why did they fail?

Financial reasons account for 1 in 10, that is 3,500 potential engineers. Is this an allowable loss? If public funds are not available to keep these young people in school, why should not potential employers, to whom the young engineer is the most precious of all commodities, supply enough money for this purpose, a sum negligible compared to amounts now spent, let us say, for such other recognized needs as advertising and research?

Again, 50 to 60 percent, that is 18 thousand potential engineers, leave for unknown causes or unclassified causes. How much of this loss can be attributed to a failure to learn of maladjustment as it accumulates and to apply remedies in the very large number of cases which are undoubtedly remediable?

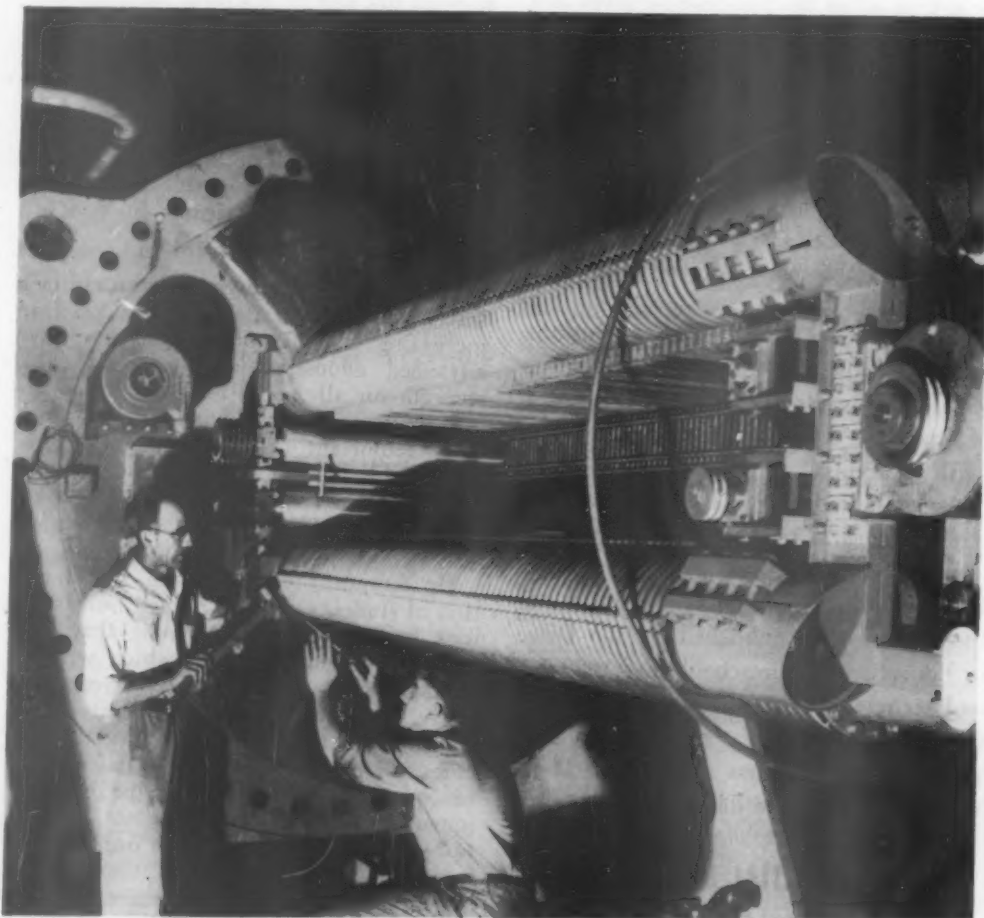
Numbers of these questions are not now answerable. In many cases institutions are studying them and applying appropriate measures. The fact remains, however, that 35,000 graduates in engineering today involves another 35,000 real persons, mostly from the top half of all the boys graduating from all the high schools in any one year, who land in the discard. The partial gains these young people make from their abbreviated course, as well as the fact that they are undoubtedly absorbed promptly somewhere into the labor force, are beside the point. They have not proceeded to their chosen objective. The time, money, and resources devoted to make them engineers is, for that end, wasted. And most serious of all, but too complex a matter to consider in this paper, the future score in frustration

and maladjustment of everybody concerned is only beginning to be realized.

### The Case for Engineering as a Choice of Profession

Engineering has a strong case as a career for a bright, apt high-school pupil. Of the 3 million males currently in the professional and technical segment of the labor force, approximately 13.8 percent, or 400 thousand, are engineers. A profession which supplies 1 job out of 8 has a strong claim for consideration for high school students with professions as their goal. As a matter of fact, if 1 in 8 of high-school graduates chose engineering, the result would be 37.5 thousand boys from the top half of graduating classes, a figure closely corresponding with estimated stable needs for graduate engineers.

A second point is that there are probably enough high school students with abilities which warrant an expectation of success in engineering. The valuable work of the Guidance Committee of E. C. P. D. has helped to supply criteria for identifying these young people.



A modern complex engineering problem, related to atomic research. Here is shown an electrostatic accelerator, under construction at the General Electric Company's General Engineering and Consulting Laboratory. High school students can prepare for this type of professional work.



Thirdly, engineering has claims beyond those of wages, prestige, and ultimate wealth on the motivation of young people in high school. The engineering profession itself sometimes forgets these claims. They are stated eloquently by Stuart Chase in a chapter called "Prometheus Enchained" in the A. A. E. E. publication of 1933 called *Vocational Guidance In Engineering Lines*. The idea that engineering is an important factor in the betterment both of our own country and of the world has a strong appeal for young people from 15 to 18 in whom idealism is a strong force.

The last point involves more than the process of selection and of guidance. Into the curriculum must go some element through which the idea of engineering as a profession may early enter the consciousness of the adolescent, and accumulate in force, for basic reasons. Such a procedure would make for a far more stable and motivated group than recruiting posters and emergency decisions. An attack on the curriculum for related purposes is being made by the Joint Committee on Economic Education.<sup>2</sup>

### What Can Be Done?

Any plan between engineering and schools should be based on facts of manpower, the purposes of high schools, the ability of engineering colleges to cooperate, and the good will of active members of the engineering profession. It should be so simple that any high school, not merely the large and well-equipped school, can take advantage of it. The last item is emphasized because of 40 percent of the high-school pupils are enrolled in small schools of 200 or fewer students. The potential engineers enrolled are too many to neglect.

1. The first step would appear to be a quota for engineering freshmen based on stable needs and the reasonable supply of students. No quota allowing for a 50-percent drop-out rate could be acceptable.
2. Engineering institutions should use better selection procedures in which the cooperation of schools, large and small, must be enlisted for applying suitable criteria. Within their own institutions college mortality should not merely be studied, but also some fixed objective of reducing drop-out rate by a certain per-

centage within a period of time should be adopted. The provision or extension of student personnel programs is an immediate problem.

3. The valuable work of the Guidance Committee of the E. C. P. D. should be extended in its three chief forms of endeavor: The supplying of evaluative criteria, the furnishing of professional information about engineering, and the enlisting of the services of engineers available to local high schools to help young people study engineering as a career.

The engineering profession should encourage the strengthening of this program by helping more schools to take advantage of it. To be more specific, they should aid these school authorities to increase their guidance facilities. In particular, more schools should be able to administer and interpret standard tests, to supply cumulative records about their students' interests and abilities, and to add to their school staffs persons trained at least partially in the counseling process. When one or two courses essential in engineering preparation are missing, adjustment such as correspondence courses or unorthodox classroom groupings might be encouraged.

4. A better understanding of the functions of engineering in realizing the ideals of the United Nations, UNESCO, the Foreign Aid program, and defense against the common enemy should be encouraged. This kind of understanding, it should be understood, concerns the instructional, rather than the guidance, program.
5. Boys in small high schools unable to obtain advanced mathematics or science courses should be recruited as a new resource. A recent study by the University of Michigan shows that the size of a high school has no correlation with the success of graduates in that institution. The lack of training in specific subject-matter fields is an unimportant factor in college success when compared with quality work and other evidence of ability and character in high school.

Institutions may wish to consider waiving certain subject-matter preliminaries in the case of apt students to whom they are unavailable, even at the expense of teaching these elements to such students after arrival on the campus. Ability and motivation reduce learning time remarkably.

6. The placement of young engineering graduates and the protection of their job and employment rights should be reexamined. Rumors of overstaffing and later elimination of young graduates should be run down, and if they are untrue, the facts should be disseminated. The reduction of experimental and research staffs at relatively slight subsidence in business activity, with a consequent displacement of young engineers at

the beginning of their careers, should be inquired into. The ratio between engineers and production workers might become more stable, and be applied to small concerns as well as large. Estimates on the demand and supply of engineers, which finally reach young people in high school often with distortions, should be released only after the strictest corroboration.

Suggestions under this heading are more in the form of questions than of statements, and inquiry may prove that any implied criticisms are groundless. The point is that the engineering profession has a stake in making sure that young people considering the choice of engineering be supplied with facts which are entirely reliable.

In conclusion it should be said that the engineering profession may expect eager cooperation from high schools, their teachers, and their counselors. They will welcome any opportunity to replace the vague aspirations of young people seeking a profession with sure grounds for an adequate choice in a career with visible goals, even if these do not promise to lead to the end of the rainbow. The schools recognize their own weaknesses in their present handling of these situations. They will welcome any aid, whether material, personal assistance, or professional advice, to help their young people. They know as well as any that the welfare of a profession depends upon the welfare of each member, and the productivity of a worker at any level is to a large degree the result of his reasonable adjustment, and to satisfactions often measured in imponderables.

## Personnel and Guidance Association Formed

A new national personnel organization named the Personnel and Guidance Association has been formed by the unification of the National Vocational Guidance Association, the American College Personnel Association and the National Association of Guidance Supervisors and Counselor Trainers. It replaces the more loosely knit Council of Guidance and Personnel Associations which, however, will continue as divisions within the new organization.

Officers of the new association are: Robert H. Shaffer, Indiana University, President; Donald E. Super, Teachers College, Columbia, President-Elect; and Frank M. Fletcher of Ohio State University, Treasurer.

<sup>2</sup> Information may be obtained from Dr. Derwood Baker, Chairman, Joint Council on Economic Education, 444 Madison Avenue, New York 22, New York.

## Recent Theses in Education

Ruth G. Strawbridge, Bibliographer, Federal Security Agency Library

THESE THESES are on file in the Federal Security Agency Library, where they are available for interlibrary loan.

*An Analysis of the Characteristics of the Exceptional Child.* By Thomas E. Jordan. Master's, 1951. Indiana State Teachers College. 49 p. ms.

*Background Factors and Adjustment: A Study of the Socio-Economic and Personal Factors in the School and Subsequent Adjustment of a Selected Group of High School Students.* By Bennetta B. Washington. Doctor's, 1951. Catholic University of America. 160 p.

*A Survey of the Developmental and Remedial Reading Programs in the Secondary Schools of Massachusetts.* By David J. Alpert. Master's, 1951. Boston University. 83 p. ms.

*The Absences of Teachers in the Public Schools of Cincinnati, Ohio.* By Roland P. Steinmetz. Master's, 1951. University of Cincinnati. 72 p. ms.

*An Analysis of the Mathematical Vocabulary Essential for Reading General Science Textbooks in Indiana Junior High Schools.* By Leslie W. Felling. Master's, 1951. Indiana State Teachers College. 181 p. ms.

*Comparative Effectiveness of Audience Versus Instructor Grading on the Development of Proficiency in Public Speaking.* By Ralph N. Schmidt. Doctor's, 1949. Syracuse University. 149 p. ms.

*Education for Korean Students with Emphasis on the Interrelationship of Reading and Speaking.* By Sun Jai Kim. Master's, 1950. Boston University. 113 p. ms.

*An Experimental Comparison of the Heterogeneous Instrumental Music Class and the Private Lesson Method.* By Gilbert F. Curtis. Master's, 1951. University of Cincinnati. 60 p. ms.

*An Experimental Study of a Student-Centered Learning Method.* By Theodore Landsman. Doctor's, 1950. Syracuse University. 149 p. ms.

*Facilitating Learning Through Emphasis on Meeting Children's Basic Emotional Needs. An In-Service Training Program.* By Anna P. Burrell. Doctor's, 1949. New York University. 2 vols.

## New Books and Pamphlets

Susan O. Futterer, Associate Librarian, Federal Security Agency Library

*Historical Fiction and Other Reading References for Classes in Junior and Senior High Schools.* Fifth revised and enlarged edition. Compiled by Hannah Logasa. Philadelphia, McKinley Publishing Co., 1951. 235 p. \$4.00.

*The College Entrance Examination Board, 50th Annual Report of the Director, 1950.* New York, College Entrance Examination Board, (425 West 117th Street) 1950. 83 p. \$0.50.

*Schools and Our Democratic Society.* By M. H. Willing, John Guy Fowlkes, Edward A. Krug, Russell T. Gregg, and Clifford S. Liddle. New York, Harper and Brothers, 1951. 417 p. \$3.50.

*Social Work Education in the United States.* The Report of a Study Made for the National Council on Social Work Education by Ernest V. Hollis and Alice L. Taylor. New York, Columbia University Press, 1951. 422 p. \$5.50.

*Oregon Rules and Regulations Governing the Certification of Teachers, Effective to July 1, 1952.* Salem, Oreg., State Board of Education, 1951. 43 p.

*Organizing the Junior High School.* Prepared by The Committee on Junior High School Problems of the California Association of Secondary-School Administrators. Washington, D. C., The National Association of Secondary-School Principals, 1951. 194 p. (The Bulletin of the National Association of Secondary-School Principals, Vol. 35, No. 182, December 1951.) \$1.50.

*A Planning Guide for the High School Library Program.* By Frances Henne, Ruth Ersted, and Alice Lohrer. Chicago, American Library Association, 1951. 140 p. \$2.00.

*Promoting Growth Toward Maturity in Interpreting What Is Read.* Proceedings of the Annual Conference on Reading Held at the University of Chicago, 1951. Compiled and edited by William S. Gray. Chicago, The University of Chicago Press, 1951. 259 p. (Supplementary Educational Monograph, No. 74.) \$3.00.

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